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Forest Service

FOREST INSECT AND DISEASE MANAGEMENT

Technology Update

Southeastern Area, State and Private Forestry, 1720 Peachtree Road, N.W., Atlanta, Ga. 30309

Southern Pine Beetle Fact Sheet Number 13

USE OF BEETLE-KILLED TIMBER FOR PARTICLEBOARD AND HARDBOARD

Southern pine beetle-killed trees dead for months and even years, in some parts of the South, can be used to manufacture commercially acceptable particleboard and hardboard. This conclusion is based on research results in North Carolina from the USDA Expanded Southern Pine Beetle Research and Applications Program.

Particleboard. The research showed that boards prepared from trees dead for 30 months in western North Carolina had MOR, MOE, internal bond, screw withdrawal, hardness, water absorption, thickness swelling, and linear expansion properties similar to those of boards manufactured from healthy pine trees. In fact, the SPB-killed wood showed small increases in internal bond strength and screw withdrawal properties. Boards produced from beetle-killed pines met industry specifications for all properties except linear expansion. However, under the conditions of the North Carolina experiments, boards prepared from healthy trees also narrowly failed to meet this one specification.

The major difference between particleboards from healthy and beetle-killed trees was that the latter yielded much darker boards because of the blue staining of the wood furnish.

Hardboard. There was no noticeable difference in the appearance of hardboard produced from beetle-killed trees and healthy ones. Quality of hardboard produced from beetle-killed trees was generally slightly lower than that from healthy trees. However, as with particleboards, the hardboards easily met industry specifications for all

properties except linear expansion. Hardboards prepared from beetle-killed wood narrowly failed this specification, but when 50 percent of the furnish included wood from healthy trees, the boards met the specifications.

The yield of wood fiber (on a weight basis) from beetle-killed trees was approximately 2 percent lower than from healthy trees. Beetle-killed trees also produced more fines when chipped. These fines averaged seven percent as compared to 3 percent from healthy trees.

Moisture content (MC) of beetle-killed trees was considerably lower than that of healthy trees. Based on wet weight, recently killed trees had an average MC of 33 percent; trees dead 30 months, 28 percent; and healthy trees, 50 percent. Thus, companies purchasing timber on a weight basis will receive more wood fiber and less moisture per dollar for beetle-killed timber; also less energy will be required to dry the wood raw material prior to board manufacture.

Because of differences in the wood of healthy and beetle-killed pines, wood from beetle-killed trees should always be mixed with wood from healthy trees to minimize effects on board characteristics and production schedules.

This fact sheet is based on research by Dr. Myron W. Kelly and Dr. Michael P. Levi, School of Forest Resources, North Carolina State University, Raleigh, N.C., in cooperation with Champion International Corporation.

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